

KEY RESULTS

Production Increase:

- **2022/2023 season:**
3,550 linear feet rehabilitated.
- **2023/2024 season:**
6,348 linear feet rehabilitated, showing improvement.
- **2024/2025 season:**
up to 10,000 linear feet planned

Challenges / Lessons Learned:

- **Weather Impact:** Rain delays affected production and increased rental equipment costs.
- **Equipment Issues:** Experienced downtime due to concrete pump repairs. Backup units are important to avoid downtime
- **Material Consistency:** Encountered issues with some hardened material, highlighting the need for proper storage.

Future Recommendations:

- Implement a separate preparation & cleaning crew to support the main pipelining crew.
- Aim for two 200-linear-foot pulls in each direction daily to increase production to 400ft/day.
- Purchase additional equipment, including a second concrete pump, to maintain production during any repairs.
- Improved material storage for consistent quality.

Proprietary shotlining mix

Proprietary Shotlining equipment

Cost Effectiveness:

- Average cost: \$96.60 per linear foot
- While slightly over budget, this method proved much more cost-effective than full pipeline replacement at 6-8 times more. This Shotlining method cost 10-15% of pipe replacement cost and allows for the consideration of the complete project.

Efficiency Improvements:

- Labor efficiency improved from 0.91 man-hours per linear foot in 2022/2023 to 0.81 in 2023/2024.

Material Performance:

- Shotlining material demonstrated high strength, with 28-day cure strengths averaging 7,162 psi – goal was over 6,000 – 8,000 psi
- Material yield was 10% over theoretical, indicating efficient use of resources.

Conclusion:

The SSJID ~~SRPDP~~ demonstrates the effectiveness of innovative shotlining techniques in addressing infrastructure challenges. Despite some hurdles, the project showed significant improvements in efficiency and production from its first to second year. This case study highlights the significant potential of trenchless rehabilitation methods in providing cost-effective, long-term solutions for irrigation districts facing similar infrastructure challenges.

Innovative Shotlining Inc.

For more information, visit
www.shotlining.com or call 209-849-8021

*“Shotlining has proven to be a very cost-effective alternative to pipe replacement”
Chad Parsons, SSJID*